UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,683	02/08/2007	Werner Lindemann	037256.57619US	3186

23911 7590 04/19/2011

CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

EXAMINER	
SEKUL, MARIA LYNN	
ART UNIT	**PAPER NUMBER**
2461	

MAIL DATE	DELIVERY MODE
04/19/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/577,683	LINDEMANN ET AL.	
	Examiner	Art Unit	
	MARIA L. SEKUL	2461	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 February 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2009* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. **Claims 19-30** are pending.

Response to Arguments

2. The objection of **claim 19** (indicated as claim 1) in the previous office action has been withdrawn as Applicant has responsively amended the claim.

3. Applicant's arguments filed 2/10/2011 have been fully considered but they are not persuasive.

4. As to **claim 19**, Applicant argues several points with respect to the combination of O'Toole, Babbitt and Zhang.

a. Applicant argues that Fig. 1 of O'Toole teaches individual servers provide information to users 105, and if a global address and connection to the internet were released as in claim 19, the servers would not be able to provide their intended function of providing information to users 105 because there would be no connection between the users and the servers.

Examiner respectfully disagrees. O'Toole teaches the servers 130 may be web servers "but could be any type of computerized device handling a plurality of connections 140 to another computerized device" (O'Toole at ¶ 13 in reference to Fig. 1). Therefore, the connection handling application is not exclusively for application with servers. Additionally, an IP connection, as taught in O'Toole, is established as necessary, so it is not necessary that the servers have connections to the users if the users are inactive, which is the purpose of the idle connection handling process.

b. Applicant further argues Babbitt teaches an external IP address by a ***single subscriber*** to determine whether it is active, and therefore, does not disclose or suggest determining whether to release a global address and a connection to another network based upon non-usage of more than one local address. Further, Babbitt does not disclose or suggest that a connection to another network is released, but instead only releasing an external IP address.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., whether to release a global address and a connection to another network based upon non-usage of *more than one local address*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Also, the claim recites a network address translation for translating "a global address to local addresses of terminals on the local area network". Given its broadest reasonable interpretation, this limitation claims that a global address is translated to a local address which is one of many possible local addresses, that is, the global address is not always translated to the same local address, but does not require the global address to be mapped to more than one local address simultaneously. In the private IP network configuration, of Babbitt, the global IP address is released for inactivity. Further, in view of O'Toole, connections are released based on idle connections.

Applicant further asserts that if the system of O'Toole were to employ a single external IP address for all of the servers and the system was modified by Babbitt in the manner proposed in the Office Action, then the system of O'Toole would make the servers completely inaccessible.

It is again noted that the features upon which applicant relies (i.e., a single external IP address for all) are not recited in the rejected claim(s).

c. Applicant next argues the combination of O'Toole in view of Babbitt because the combination does not yield an improvement. However as stated in the previous office action, the reason for combining was to combine the idle connection processing of O'Toole in the private IP network configuration of Babbitt because O'Toole suggests that the idle connection reduction device may be implemented in any device with connections ("the idle connection device 135 could be implemented in any computerized device having connections", and "servers 130 …could be any type of computerized device handling a plurality of connections 140 to another computerized device"; O'Toole at col. 6, lines 52-58).

Accordingly, the rejection of claim 19 is maintained.

5. As to **claim 20**, Applicant argues that one skilled in the art would not have been motivated to modify O'Toole to terminate the connection of all of the servers to the Internet because this would prevent the servers from achieving their intended function of serving information to users.

Examiner respectfully disagrees for the reasons stated above, mainly, that O'Toole is not directed solely to servers, but to "any type of computerized device handling a plurality of connections" ((O'Toole at col. 6, lines 55-58).

Accordingly, the rejection of claim 20 is maintained.

6. Examiner clarifies the reference to Zhang. Zhang was cited to further show a configuration suggested by the combination of O'Toole (teaching the idle connection handling) and Babbitt (showing a private IP network configuration with a network access table NAT for monitoring subscriber inacity), as Zhang discloses a LAN with an implementation of a NAT, and which has established PPP connection from the LAN to the network.

7. As to **claim 27**, Applicant argues the deficiency of the combination of O'Toole, Babbitt and Zhang for which Satapati does not cure the deficiencies. Applicant's arguments regarding the combination of references are addressed above with respect to claim 19.

Accordingly, the rejection of claim 27 is maintained.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claim 19-26 and 29-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **O'Toole, Jr. (US Patent 7,287,082)** (hereinafter O'Toole) in view of **Babbitt et al. (US Patent No. 6,618,757)** ("Babbitt") in view of **Zhang et al. (US PGPub 2002/0002621)** ("Zhang").

As to **Claim 19**, O'Toole discloses an apparatus with:

"a router and at least one connection controller, said connection controller controlling connections involving at least one of the terminals to another network said router, in use, routing data [ ]" (a router and a connection handling application called the

idle connection reduction device for connections between clients on one network to another network, **Fig.1-2**).

O'Toole does not explicitly disclose that the data is routed "to and from terminals on a local area network".

Babbitt, from the same or similar field of endeavor, teaches a private network **112** serving terminals **116** with access to the Internet **114**; gateway **52** performs functions of a router, e.g. routing packets from the internal network to the external network (**Fig. 6; col. 10, lines 36-43**). Babbitt also teaches that the servers **118** may be located on servers located in the private network (**col. 10, lines 4**).

Zhang, from the same or similar field of endeavor, teaches the NAT table is used to support a local area network (LAN) configuration (**Fig. 1; ¶ 10, 15-16**).

O'Toole teaches that the idle connection reduction device **135** could be implemented in any device having connections including the servers **130**, the router **115**, and the switch **120** (**col. 6, 52-55**).

It would have been obvious to one skilled in the art at the time the invention was made to use the network configuration of Babbitt with the private network configuration as taught in O'Toole or the local area network LAN configuration of Zhang because it is suggested in O'Toole that the idle connection reduction device may be implemented in any device with connections, and the gateway **52** of Babbitt controls connections between the private IP and the internet, **Fig. 6**. It would have also been obvious that the servers **130** of O'Toole in **Fig. 1** are clients in a private network, as suggested in Babbitt (**col. 10, lines 1-4**).

Babbitt further discloses **"**a network address translation translator for translating addresses on incoming data addressed to a global address to local addresses of terminals on the local area network**"** (packets routed between the private network and the public internet are controlled through the NAT table, that is, the connections are controlled by the NAT table, **col. 3, lines 32-36; col. 4, lines 61-63**); and

Babbitt does not explicitly disclose "a monitor for monitoring usage of the local address and for sending a message indicative of non-usage to the connection controller".

O'Toole teaches monitoring for an idle connection (**col. 8, lines 1-9**) and notifying the connection dropper which drops the connections determined by the connection policy (**col. 9, lines 43-67**).

Babbitt teaches the network address translator (NAT) **64** tracks, or monitors, current external IP addresses that are associated with an active subscriber's internal address (**Fig. 2; col. 3, lines 22-36**); and when the external address is released, the dynamic IP address manager requests the NAT to discard the record in the NAT table, **col. 5, lines 48-58**).

It would have been obvious to use the idle connection monitor of O'Toole with the NAT table of Babbitt because the NAT table contains information about connections between internal and external IP addresses, therefore, it is a use of a known idle connection monitor technique to improve the similar NAT table in the same way.

Babbitt does not explicitly disclose "wherein the connection controller is responsive to receipt of the message to determine whether to release the global address and a connection to another network".

O'Toole describes a connection monitor that monitors connections that have been idle for a specified period of time and notifies the connection policy of the idle connection (**Fig. 2, col. 7, lines 18-28, 38-47**). When the idle connection reduction device detects an idle drop condition, invokes a connection drop policy which selectively drops idle connections (**Fig. 2-4, col. 9, lines 39-54**).

Babbitt teaches when the external IP address is not actively being used and the hold time has expired, then the external IP address is released and the DIPAM requests the NAT to discard the record of the correspondence between the private IP address of the subscriber and the assigned IP address, **col. 5, lines 49-58**).

It would have been obvious to one skilled in the art at the time the invention was made to use the idle connection controller of O'Toole with the dynamic IP address management/release as taught in Babbitt because the NAT is a record of IP addresses assigned for a connection between an internal and external network. If an IP address is released due to inactivity so the IP address can be used by another subscriber, as in Babbitt, it would be obvious to clear any connection associated with IP address because the connection would also be idle.

Babbitt does not explicitly disclose "the network address translator includes a table of network addresses having associated use state data".

O'Toole discloses collecting idle connection metrics based on usage, for instance, an idle timer for connections (**Fig. 2; col. 7, lines 44-47; Fig. 4, step 355**).

Babbitt teaches that when a subscriber request includes an application, or an identification of the application, an expiration time for the respective IP address is assigned. Upon expiration of a given timer, the DHCP issues a notice to a respective subscriber, **col. 7; lines 32-47**).

It would have been obvious to one skilled in the art at the time the invention was made to use the idle connection metrics as taught in O'Toole with the NAT table of Babbitt because it is applying a known technique to improve the similar NAT table, which also contains connection information, to yield predictable results.

As to **claims 20 and 30**, O'Toole in view in view of Babbitt in view of Zhang discloses claims 19, 27 and 29, respectively.

Zhang further discloses "the connection to the another network supports a plurality of terminals on the local area network" (computers 86*a* and 86*b* are coupled to hub 88 then through modem 90 to gateway 82 to connect the computers to multiple networks ("connection to the another network"), that is, there is one PPP connection between gateway 182 and modem 90 serving the multiple users 86*a* and 86*b* **Figs. 3, 5 and 6; ¶ 32, 36-38**).

Zhang does not explicitly disclose "the connection controller releasing the connection terminates the connection for all of the plurality of terminals to the another network".

Babbitt teaches an external IP address is released when there is no subscriber activity (**col. 6, lines 1-8**).

It would be obvious to one skilled in the art at the time the invention was made that the release of the external IP address as taught in Babbitt would occur if no subscriber activity was detected from terminals in the LAN of Zhang because the external IP address is release only when there is no subscriber activity detected, which is a predictable result.

As to **claim 21,** O'Toole in view in view of Babbitt in view of Zhang discloses claim 20.

O'Toole further discloses "wherein the monitor is an IP router" (that the idle connection reduction device monitors a set of connections, and can be implemented on any device having connections including the network router **115**; **Fig. 1-2; col. 6, lines 18-19, 53-55**).

As to **claim 22,** O'Toole in view in view of Babbitt in view of Zhang discloses claim 21.

Zhang further discloses "wherein the connection operates in accordance with a point to point protocol (PPP) and at least one additional protocol" (router implements a protocol stack using IP over a filter function, which filter function may be PPP, **Fig.2**; and another session by a user does not have to use PPP but may use any network protocol ("one additional protocol"); **¶ 35**).

As to **claim 23,** O'Toole in view in view of Babbitt in view of Zhang discloses claim 22.

O'Toole in view in view of Babbitt in view of Zhang does not explicitly disclose "wherein the at least one additional protocol is one of a point to point tunneling protocol (PPTP) or a point to point protocol over Ethernet (PPPoE)".

As is well-known in the art, the PPPoE protocol was designed for transmitting PPP over Ethernet. It would have been obvious to one skilled in the art at the time the invention was made to implement PPP over PPPoE if the network also implemented Ethernet, because it is a simple substitution of one known element, i.e. protocol, for another to obtain predictable results.

As to **claim 24,** O'Toole in view in view of Babbitt in view of Zhang discloses claim 20.

O'Toole further discloses "wherein the connection controller is an entity on the router" (the idle connection reduction device which controls the connections could be implemented in any computerized device including the router; **col. 6, lines 52-55**).

As to **claim 25**, O'Toole in view in view of Babbitt in view of Zhang discloses the apparatus of claim 24.

O'Toole further discloses "wherein the at least one connection controller is a software object" (the software programs perform the idle connection reduction device, **col. 13, lines 28-36**).

As to **claim 26**, O'Toole in view in view of Babbitt in view of Zhang discloses the apparatus of claim 25.

O'Toole further discloses "wherein a plurality of respective connection controllers is provided, each controlling a respective connection" (the software programs perform

the idle connection reduction device, and it would have been obvious to one skilled in the art to have an idle connection handling process, or instance of a process, for each connection, **col. 13, lines 28-36**; especially in view of Babbitt which checks for subscriber activity related to an external IP address, i.e. a particular connection).

As to **Claim 29**, O'Toole discloses a router comprising:

a connection controller (O'Toole discloses a router and a connection handling application called the idle connection reduction device, **Fig.1-2)**; and

a monitor coupled to the connection controller (O'Toole describes a connection monitor that monitors connections that have been idle for a specified period of time and notifies the connection policy of the idle connection, **Fig. 2, col. 7, lines 18-28, 38-47**).

O'Toole does not explicitly disclose "the monitor comprising a network address translator with a global address and local addresses of a plurality of terminals on a local area network".

Babbitt, from the same or similar field of endeavor, teaches a gateway with a network address translator NAT with entries for tracking, or monitoring, current external IP addresses that are associated with an active subscriber's internal address (**col. 3, lines 32-36**); and timer **62** monitors subscriber traffic to determine whether an IP address is actively being used by the subscriber; the timer **62** monitors packets sent to or sent by the subscriber as they pass through the gateway GW **52** (**col. 3, lines 45-55**). It is implicit that an inactive IP address indicates an inactive connection.

It would have been obvious to one skilled in the art at the time the invention was made to use the idle connection reduction device of O'Toole with the NAT table as

taught in Babbitt because the NAT table maintains connection information from a private network to the public network, and as such, the combination is a combination of prior art elements according to known methods to yield predictable results.

O'Toole further discloses "wherein the router is coupled by a first connection to another network" (router 115 is connected to the network 110, **Fig. 1**).

O'Toole does not explicitly disclose "wherein the router is respectively coupled by a plurality of connections to the plurality of terminals on the local area network".

Babbitt, from the same or similar field of endeavor, teaches a private network **112** serving terminals **116** with access to the Internet **114**; gateway **52** performs functions of a router, e.g. routing packets from the internal network to the external network (**Fig. 6; col. 10, lines 36-43**). Babbitt also teaches that the servers **118** may be located on servers located in the private network (**col. 10, lines 4**).

Zhang, from the same or similar field of endeavor, teaches the NAT table is used to support a local area network (LAN) configuration (**Fig. 1; ¶ 10, 15-16**).

O'Toole teaches that the idle connection reduction device **135** could be implemented in any device having connections including the servers **130**, the router **115**, and the switch **120** (**col. 6, 52-55**).

It would have been obvious to one skilled in the art at the time the invention was made to use the private network configuration of Babbitt or the local area network LAN configuration of Zhang with the network configuration as taught in O'Toole because it is suggested in O'Toole that the idle connection reduction device may be implemented in any device with connections, and the gateway **52** of Babbitt controls connections

between the private IP and the internet, **Fig. 6**. It would have also been obvious that the servers **130** of O'Toole in **Fig. 1** are clients in a private network, as suggested in Babbitt (**col. 10, lines 1-4**).

O'Toole does not explicitly disclose "wherein the monitor monitors usage of the local addresses and sends a message indicative of non-usage to the connection controller".

Babbitt teaches the network address translator (NAT) **64** tracks current external IP addresses that are associated with an active subscriber's internal address (**Fig. 2; col. 3, lines 22-36**); and when the external address is released, the dynamic IP address manager requests the NAT to discard the record in the NAT table, **col. 5, lines 48-58**).

O'Toole teaches monitoring for an idle connection (**col. 8, lines 1-9**) and notifying the connection dropper which drops the connections determined by the connection policy (**col. 9, lines 43-67**).

It would have been obvious to use the idle connection monitor of O'Toole with the NAT table of Babbitt because the NAT table contains information about connections between internal and external IP addresses, therefore, it is a use of a known idle connection monitor technique to improve the similar NAT table in the same way.

O'Toole does not explicitly disclose "wherein the connection controller is responsive to receipt of the message to determine whether to release the global address and the first connection to the another network.

Babbitt teaches when the external IP address is not actively being used and the hold time has expired, then the external IP address is released and the DIPAM requests

the NAT to discard the record of the correspondence between the private IP address of the subscriber and the assigned IP address, **col. 5, lines 49-58**).

O'Toole describes a connection monitor that monitors connections that have been idle for a specified period of time and notifies the connection policy of the idle connection (**Fig. 2, col. 7, lines 18-28, 38-47**). When the idle connection reduction device detects an idle drop condition, invokes a connection drop policy which selectively drops idle connections (**Fig. 2-4, col. 9, lines 39-54**).

It would have been obvious to one skilled in the art at the time the invention was made to use the idle connection controller of O'Toole with the dynamic IP address management/release as taught in Babbitt because the NAT is a record of IP addresses assigned for a connection between an internal and external network. If an IP address is released due to inactivity so the IP address can be used by another subscriber, as in Babbitt, it would be obvious to clear any connection associated with IP address because the connection would also be idle.

10. **Claims 27-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **O'Toole, Jr. (US Patent 7,287,082)** (hereinafter O'Toole) in view of **Babbitt et al. (US Patent No. 6,618,757)** ("Babbitt") in view of **Zhang et al. (US PGPub 2002/0002621)** ("Zhang") in view of **Satapati et al. (US PGPub 2004/0076180)** ("Satapati").

As to **Claim 27**, Satapati discloses:

"providing a router connected by ports to terminals on the LAN" (port address translation PAT to identify different devices with the same address but only one public address, **Fig. 1; ¶ 4, Table 1**); and

"recording the use of a port in a network address translator table" (**Table 1**); and

Satapati does not explicitly disclose "translating, using a network address translator table, incoming data addressed to a global address to local addresses of terminals on the LAN".

Zhang, from the same or similar field of endeavor, teaches the NAT table is used to support a local area network (LAN) configuration (**Fig. 1; ¶ 10, 15-16**).

Satapati teaches the NAT provides network address translations between private network users and a public network (**¶ 4**).

It would have been obvious to one skilled in the art to use the local area network configuration of Zhang with the shared addressing of the network as taught in Satapati because the combination applies the use of a known technique of Satapati with a known network ready for improvement to yield predictable results.

Satapati in view of Zhang does not explicitly disclose "providing a connection controller for controlling connection between the router and the another network".

O'Toole discloses a connection handling application called the idle connection reduction device (**Fig.1-2)**.

Satapati teaches the NAT table contains entries that list all network address translations for current connections from private devices to public devices, e.g. **Table 3** (**¶ 34**).

It would have been obvious to one skilled in the art at the time the invention was made to use the connection controller of O'Toole with the NAT table of Satapati in view of Zhang because it is combining prior art elements according to known methods to

yield predictable results, that is, because the NAT table maintains a record of the connection, modifying or deleting a connection implicitly requires modifying or deleting a NAT table entry.

Satapati in view of Zhang in view of O'Toole does not explicitly disclose "monitoring, by a monitor, use of the ports".

Babbitt teaches the network address translator (NAT) **64** tracks current external IP addresses that are associated with an active subscriber's internal address (**Fig. 2; col. 3, lines 22-36**); and when the external address is released, the dynamic IP address manager requests the NAT to discard the record in the NAT table, **col. 5, lines 48-58**).

Satapati teaches a NAT table with port information for identifying devices with the same address but only one public address (**Fig. 1; ¶ 4, Table 1**).

It would have been obvious to use external IP address monitoring using the NAT table as taught in Babbitt with the NAT table containing port information of Satapati in view of Zhang because it is combining prior art elements according to known methods to yield predictable results, that is, even though the mapping from internal to external IP address uses a port, the activity relating the external IP address may still be monitored.

Satapati in view of Zhang in view of O'Toole does not explicitly disclose "recording the use of the local addresses in the network address translator table".

O'Toole discloses collecting idle connection metrics based on usage, for instance, an idle timer for connections (**Fig. 2; col. 7, lines 44-47; Fig. 4, step 355**).

Babbitt teaches that when a subscriber request includes an application, or an identification of the application, an expiration time for the respective IP address is

assigned. (**col. 7, lines 32-47**). Further, timer **62** monitors subscriber traffic to determine whether an IP address is actively being used by the subscriber; the timer **62** monitors packets sent to or sent by the subscriber as they pass through the gateway GW **52** (**col. 3, lines 45-55**). It would have been obvious that the subscriber traffic could be monitored either from the external IP address side or the internal IP address side with the timer, as the motivation of Babbitt is to determine if there is activity on the external IP address.

It would have been obvious to one skilled in the art at the time the invention was made to use the idle connection metrics as taught in O'Toole with the NAT table of Babbitt in view of Zhang because it is applying a known technique to improve the similar NAT table, which also contains connection information, to yield predictable results.

Satapati in view of Zhang in view of O'Toole does not explicitly disclose “when the local addresses are unused, the monitor sends a message to the network controller to break the connection between the router and the another network”.

O’Toole teaches an idle connection handling application which monitors use of connections and release connection that are idle for a certain period of time (**Figs. 1-2, 4)**.

Babbitt teaches the network address translator (NAT) **64** tracks current external IP addresses that are associated with an active subscriber's internal address (**Fig. 2; col. 3, lines 22-36**); and when the external address is released, the dynamic IP address manager requests the NAT to discard the record in the NAT table, **col. 5, lines 48-58**).

It would have been obvious to use the idle connection monitor of O'Toole with the NAT table of Babbitt in view of Satapati in view of Zhang because the NAT table contains information about connections between internal and external IP addresses, therefore, it is a use of a known idle connection monitor technique to improve the similar NAT table in the same way.

As to **claim 28**, O'Toole in view in view of Babbitt in view of Zhang discloses the method of claim 27.

Zhang further discloses "the connection between the router and the another network supports the applications running on the terminals on the LAN" (computers 86*a* and 86*b* are coupled to hub 88 then through modem 90 to gateway 82 to connect the computers to multiple networks ("connection to the another network"), that is, there is one PPP connection between gateway 182 and modem 90 serving the multiple users 86*a* and 86*b* **Figs. 3, 5 and 6; ¶ 32, 36-38**).

Zhang does not explicitly disclose "when the connection controller breaks the connection between the router and the another network the connection controller terminates the connection for all of the applications running on the terminals on the LAN to the another network".

Babbitt teaches an external IP address is released when there is no subscriber activity toward the external IP address (**col. 6, lines 1-8**).

It would be obvious to one skilled in the art at the time the invention was made that the release of the external IP address as taught in Babbitt would occur if no subscriber activity was detected from terminals in the LAN of Zhang because the

external IP address is release only when there is no subscriber activity detected, which is a predictable result.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA L. SEKUL whose telephone number is (571)270-7636. The examiner can normally be reached on Monday-Friday 9:00 AM to 5:30 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARIA L SEKUL/
Examiner, Art Unit 2461
/Huy D Vu/
Supervisory Patent Examiner, Art Unit 2461